

OIL & GAS

Digitalization Trumps Disruption



By Barry Samria

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We made the argument in our previous article, [Expect More Disruption](#), that oil price recovery in the second half of 2020 and continuing into 2021 will not entirely prevent more financial stress for Shale operators. For some, it is too little too late. The current cost base is just not sustainable for many others, even with anticipated oil price recovery in 2021. To survive and come through this mostly pandemic-driven economic downturn, organizations must fundamentally review their existing Operational Frameworks. Many organizations were already struggling; the pandemic merely escalated the timeframe for action.

Many Shale Operators have concluded that it is no longer enough to refine and retread tried and tested continuous improvement strategies. The challenge stems from the difficulty in changing middle/lower management mindsets and habits molded over the years by utilizing those same constant improvement strategies designed to address yesterday's operational and cost challenges.

We have seen this firsthand over the years. We have worked with Shale operators across every aspect of the hydrocarbon value chain to drive efficiencies ranging from cycle time reduction in Permitting, Release-to-Drill, Spud-to-Spud, and many other elements of the Exploration value chain. We worked with Field Operations to reduce Well downtime, well workover cycle time, and increase production while lowering overall Lease Operating Expense. These strategies have worked very well and delivered significant value to organizations, and in the right circumstance, will continue to provide value.

However, A.I. is a game-changer for Shale Operators, as it is for many other sectors. These technologies provide the fuel to transform Operational Frameworks wholly and fundamentally. There has been a discussion amongst Operators of the transformative opportunities A.I. technologies provide ad nauseam, but implementation is woefully lacking. We are seeing more staid industrial sectors adopting A.I./IoT far more rapidly than our industry.

Oil, unlike other industrial sectors, has more than its fair share of boom-and-bust cycles. Low oil price environments force companies to optimize; more often than not, cuts tend to be deeper than they need to be simply because of initial panic leading to an over-reaction. Unfortunately, the Oil sector has a short memory; as prices recover, we tend to forget the downturns' pain, and away we go again, aggressively chasing barrels at any cost.

Shale Operators in particular, but Oil in general currently finds itself at a crossroad given the industry's myriad of current challenges. Challenges ranging from the economic realities of a Covid affected world, demand and market volatility, new uncertainties driven by the political and regulatory landscape with a change in administration (the decision on the Keystone Pipeline being a prime example), unsustainable debt levels, workforce demographics, the lack of industry appeal to millennials creating significant challenges in attracting younger people into the sector, the list of challenges is depressingly long! All of this creates a situation where Operating Frameworks are and will continue to be stretched in ways we have not seen before. The ramifications of which are copious, from impacts on people and equipment safety, morale, employee well-being and threats to the environment. The good news is that we have ready-made A.I. solutions that are well suited to address many of today's challenges.

This industry, more than many others, is an ideal candidate for rapid digital transformation. Given the enormous amounts of data currently generated in the operation of oil and gas assets, the significance of which is that most Operators already have the critical inputs to optimize digitalization fully. There has never been a shortage of data given the advanced operating environment and technologies utilized in Oil and Gas operations. Data is rarely the issue, it is insufficient time and resources to execute thorough analyses to extract meaningful learnings. Conversely, A.I. can use every single binary digit of that data lake to understand and utilize those learnings to optimize desired outputs at a fraction of the time and cost. This also enables employees to focus on more critical and value-adding activities.

The technology minimizes, ultimately eliminating occurrences of human error. We are already in the realm to be able to deliver meaningful improvements using A.I. including:

- Rapid improvement in delivering exploration process outcomes
- Better drilling sites
- Improved drilling performance
- Reduced capital and operational cost
- Predicted and prevented spills
- Improved worker safety
- Reduced equipment failures

This list is exhaustive by no means but provides a pretty good idea of what organizations can expect from a robust implementation of oil field digitalization. Implementation is not necessarily tricky, time-consuming, nor expensive. The biggest challenge is not implementing the technology, but change management and human behavior, the willingness of employees to accept a very different set of roles and responsibilities necessary to optimize the technology. Organizations that are struggling to implement their digitalization strategies are doing so because they focused solely on the technology and not on the critical supporting changes to organization structures, accountabilities, fit-for-purpose processes, leadership skills and management systems.

Some simple steps can help deliver rapid results focusing on Operations, Technology and Organization:

- Develop and define your digitalization vision and roadmap
- Prioritize the outcomes based on business need
- Engage the organization at every level
- Fit-for-purpose technology
- Define robust metrics to measure and manage success
- Develop rigorous decision-making frameworks
- Communicate results regularly to maintain employee engagement

There is rarely a strong debate for a big-bang approach; it is always better to start small, deliver results, develop the foundation, and build rapidly. What is not up for debate is that organizations can wait no longer. The time to act is now.



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